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AUTHOR Jennings, R. Greg
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ABSTRACT

A study investigated the relationships between parent aspirations for their children and their children's later aspirations and high school completion. Data were obtained from a longitudinal study called "Hyperactivity-Learning Behavior Disorders Project." Subjects were 201 students in grades 1-3 who were later interviewed in junior high school and students who were in grades 4-6 at the time of parent interviews and who were interviewed again in grades 11-12. Among the subjects was a group of children with behavior problems who were diagnosed and treated for hyperactivity. The following were among the findings: (1) parents use academic evaluations of their children to form educational but not career aspirations for their children; (2) neither parents' careers nor educational aspirations for their children were related to their children's levels of educational aspirations; (3) parents' evaluation of students' academic confidence and students' educational aspirations predicted high school completion among high school ages; (4) parents of nonhyperactive children in upper elementary grades had higher educational aspirations for their children than did parents of hyperactive and learning behavior problem children of this age group; and (5) hyperactivity and learning behavior problems had an increasingly negative influence on parents' educational aspirations for their children as students progressed in school. (Contains 25 references.) (CML)

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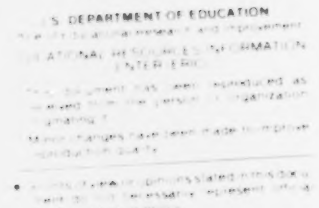
PARENTAL ASPIRATIONS FOR CHILDREN AND CHILDREN'S ASPIRATIONS: A LONGITUDINAL STUDY OF EDUCATIONAL AND CAREER ASPIRATIONS AMONG HYPERACTIVE AND NON-HYPERACTIVE CHILDREN



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R. Greg Jennings

University of California at Berkeley

National Center for Research in Vocational Education
University of California at Berkeley
1995 University Avenue, Suite 375
Berkeley, CA 94704

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FOREWORD

The central goal of this study was to investigate the relationships between parent aspirations for their children and their children's later aspirations and high school completion. The study expanded the measurement design of the Wisconsin Model of Status Attainment by (1) integrating prospective data on subjects, (2) selecting parents as one source of significant-other influence on aspirations, and (3) including parents' judgments of their children's academic abilities.

Subjects were grouped into two age groups and three cohort groups: (1) subjects in primary elementary grades 1-3 (cohort 1), and (2) subjects in later elementary grades 4-6 (cohorts 2a and 2b). Student aspirations and career goals data was available at junior high school grades for cohort group 1. Data for cohort 2a was available at early high school grades 9-10. Subjects in cohort group 2a were available in late high school grades 11-12 for a follow-up interview thus forming a third cohort group, 2b. Among the subjects was a group of children with behavior problems who were diagnosed and treated for hyperactivity.

The results indicated that parents used academic evaluations of their children to form educational aspirations but not career aspirations for their children. Neither parents' careers nor educational aspirations for their children were related to their children's levels of educational aspirations. Parents' evaluation of students' academic confidence and students' educational aspirations predicted high school completion among high school ages. Results thus supported the relevance of parent knowledge—using information about students to form aspirations—for future studies of parent and child aspirations. Differences in aspirations between students with hyperactivity and learning behavior problems and non-hyperactive students are addressed.

Findings suggest that educational policymakers developing programs to encourage parent involvement in the educational process should consider links between the student's educational aspirations and high school completion and the student's parents' evaluations and aspirations for the student.

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INTRODUCTION

Most all parents want the best educational and economic advantages for their children's futures. In his 1992 State of the Union address President Bush emphasized high expectations for American children in their pursuit of education and future economic productivity. During the current period of economic concerns, it seems appropriate to emphasize the aspirations of students, as well as their parents' aspirations for them. We cannot assume, however, that aspirations are simple, direct precursors to educational and career attainment. Indeed there must be empirical investigation of the predictors of student aspirations and attainment in order to identify the attitudes, behaviors, and individual characteristics that are associated with desired aspirations and attainments. This is the central challenge to be addressed in this paper.

Research literature related to this topic can be divided into "aspiration research" and "status attainment" research. The former field has investigated the roles of parent influences, students' individual characteristics, and environmental/school factors that affect student aspirations for education and careers. The latter field—status attainment—has linked variables of social origin (e.g., father's education and career) with attainment outcomes such as level of education and first occupation.

Parent Factors in Aspiration Research

Recent aspiration literature has addressed the roles of parents in promoting their children's aspirations. These roles have been well-studied and documented. According to Bempechat (1990),

> A considerable amount of research evidence is converging to show that parents' attitudes, expectations, and beliefs about schooling and learning guide their behavior with their children and have a causal influence on the children's development of achievement attitudes and behaviors. (p. 4)

This paper will focus on one parent belief—parent aspirations for their children. This term refers to the goals, wishes, and expectations parents have for their child's education and career and will henceforth be called parent educational aspiration for child (PEA) and parent career aspiration for child (PCA).

In a literature review of parent expectation research, Seginer (1983) identified parent knowledge as a central antecedent of parent aspiration. Parent knowledge is the extent to which parents use information about their children's school performance in forming their aspirations for their children. Thus, parents form "realistic expectations" for children based on school feedback; "idealistic expectations" based on dreams, hopes, and wishes; and "standards of achievement" based on implicit standards parents use to evaluate children's performance (e.g., excellent, satisfactory, or unacceptable).

The empirical investigation of Klein, Freeman, and Millett (1973) showed that parents' informal evaluations of children's abilities are closely related to their actual performance on language, memory, and perception tests. Support for the relevance of parent knowledge is evidenced by Parsons, Adler, and Kaczala (1982) who found that parents' estimations of their children's abilities were predictive of children's current and future expectations in math. But how do parent aspirations for their children translate into actual achievement behavior? Researchers have addressed this question by identifying mediating factors between parent aspiration and student achievement.

Mediating factors for children's aspirations have been explained theoretically both as simple behavioral reinforcement of conformity to parents' expectations, as reviewed in Seginer (1983), as well as complex socialization processes (Bempechat, 1990). Bempechat distinguished between academic socialization (modeling and emphasizing the attitudes and values for academic achievement) and cognitive socialization (providing tasks for cognitive development). Similarly, Trudewind (1982) identified the provision of a "stimulus environment" as a critical aspect of a child's own cognitive and attitudinal development. These factors provide links between the measurement of parent aspirations and the behaviors that are associated with student aspiration and achievement.

Empirical studies testing the links between parent aspirations and student achievement have three common components. First, there are differing operational definitions of expectations and aspirations. Definitions range from years of schooling desired for a child, to the types of occupation desired, to report card grades, to the level of academic achievement. The second component is the actual source of data collection (e.g., mother's and or father's responses versus student's perception of parent's aspirations). The third component is some measure of student academic achievement as an outcome. Academic achievement measures have included grade point averages (GPA), class

rankings, achievement test scores, and grades in single academic subjects. In general, according to Seginer (1983), parent expectations and aspirations have consistently patterned student achievement in studies regardless of the definition of parent expectation.

Studies of parent factors are helpful in understanding early development of student attitudes and attainments. However, such relations become more complex as school experiences and social interaction increase in importance (Trudewind, 1982). It is for this reason that we must also address the individual characteristics of children that may interact with parent factors and influence student's own development of aspirations.

Student Ability and Self-Concept of Ability in Aspiration Research

Previous aspiration research has frequently investigated the relationship between student's academic ability or self-concept of ability and the amount of education a student desires (educational aspiration) or the prestige of student's desired occupation (occupational aspiration). Some studies have centered attention on the subject's future plans. In one study, Danziger (1983) investigated predictors of educational and career aspirations among seventy male and seventy-five female ninth and twelfth graders. Educational plans that measured educational aspiration ranged from less than high school to college education.

Danziger ranked occupational plans by prestige through Duncan's (1961) occupational scale to measure occupational aspiration. She showed that GPA and academic self-concept (i.e., students' academic self-rankings in class and their reported ability to attain a college degree) were the main variables shaping educational aspirations for males. For girls, self-concept of ability and perception of opportunities in careers were significantly related to their educational aspirations. Self-concept of ability and academic test scores were moderately related to occupational aspiration for girls; however, these variables were not related to occupational aspirations of boys.

The level of measurement of subject characteristics (individual versus aggregate) is extremely important in interpreting aspiration results. One body of research has focused on the aggregating of student factors within the school environment (Alwin & Otto, 1977; Pascarella, Walberg, & Junker, 1981). The reported relationships between student aspirations and school-level differences have not been convincing.

Alwin and Otto (1977) studied school environmental factors (e.g., class morale across schools) and individual characteristics (e.g., gender, socioeconomic background, and academic ability). Subjects were 4,303 high school seniors from a stratified sampling of schools in the state of Washington. Results suggested that school environment factors did not add additional explanation of variance to the individual level of analysis. The individual level of analysis is clearly the appropriate level to analyze aspirations. Given a rationale for future analysis at the individual level, let us now summarize central difficulties of the aspiration literature.

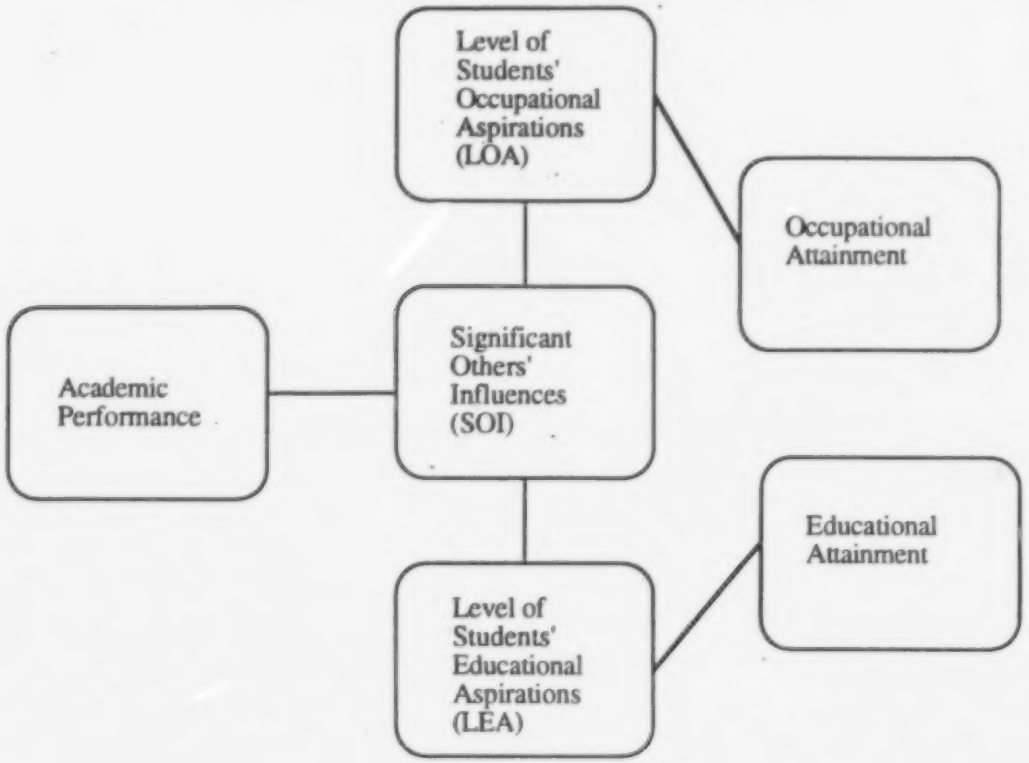
Several limitations in methodology and scope become apparent for many empirical studies of career and educational aspiration. Such studies establish subject age groups at the time of the measurement of career selection or educational aspiration; however, they lack specification of predictive variables at various ages prior to the point of investigation. In general, researchers have not used prospective models in their designs; consequently, the studies do not provide evidence of the empirical relationships of aspirations to future outcomes (e.g., high school completion or job attainment). Aspirations, achievement, and motivation are common dependent variables measured at the time of study. With infrequent exceptions (e.g., Marini & Greenberger, 1978), there are few comprehensive models conceptualizing the links between variables that influence outcomes.

Status Attainment Research

The work of Sewell, Haller, and Portes (1969) stands out as an exceptional integration of prediction and outcome variables in a study that was a progression from Blau and Duncan's (1967) *American Occupational Structure* paper. The Sewell et al. (1969) paper, "The Educational and Early Occupational Attainment Process," has become known as the Wisconsin Model. It proposed multiple influences on student aspirations and multiple attainment outcomes. The model theorized that variables such as aspirations, academic performance, and social influences mediate the influence of socioeconomic origins on educational and occupational attainment.

Sewell et al. (1969) and Sewell, Haller, and Ohlendorf (1970) raise three hypotheses that form the basis of inquiry for the current study. Figure 1 illustrates the hypothetical relationships posed by Sewell and colleagues.

Figure 1
Wisconsin Model Paths for Empirical Investigation



The first hypothesis states, ". . . significant others base their expectations on demonstrated abilities as they see them in academic performance rather than in less obvious indications of mental ability" (Sewell et al., 1970, p. 1015). This quote emphasizes significant others' perceptions or judgments of children's abilities. The first hypothesis was investigated by a path analysis between academic performance (AP) (as measured through class ranking) and significant others' influences (SOI), a weighted combination of three measures (student perception of encouragement from parents and from teachers to attend college and student perception of peers' educational plans). Sewell et al. (1969) showed a moderate relationship between AP and SOI (r=.49).

Exclusion of relevant sources of data and limited operational definitions make it difficult to interpret the finding for several reasons. First, Sewell et al. (1969, 1970) never utilized data from parents, teachers, or peers. We do not know what significant others base

their expectations upon without measuring their perceptions of students' AP! In addition, by combining student perception of perceived "influence" from these sources it is not possible to study the effects of a specific source of influence (e.g., parent expectation). Second, the SOI variable did not include career expectations. We cannot assume that educational and career aspirations of parents for students have similar origins. Third, class ranking is an informative measure of individual differences in achievement; however, it does not reflect how the significant others interpret this information (e.g., parent knowledge).

The second hypothesis is based on Sewell et al.'s (1970) conclusion that, ". . . a youth's levels of aspiration will be fairly consistent with the status levels expected of him or exhibited to him by his significant others" (p. 1015). Two paths related to this hypothesis were the following: (1) SOI and student's level of educational aspiration (LEA) not continuing beyond high school, vocational school, and college; and (2) SOI and student's level of occupational aspiration (LOA) as a socioeconomic prestige index for occupations (Duncan, 1961). Sewell et al. (1969) showed moderate correlations between SOI and the two variables: LEA (r=.59) and LOA (r=.53). The hypothesis implies that there is a comparison of student and parent aspiration. The central difficulty in interpreting this finding, however, is that Sewell et al. (1969, 1970) are actually interrelating student aspiration with student perception of significant others' expectations.

The third hypothesis is that, "Levels of educational and occupational aspiration should have substantial effects on the educational and occupational attainment, respectively" (Sewell et al., 1970, p. 1016). The related path was between LEA and student educational aspiration (SEA). Educational attainment had four categories: (1) no post high school education, (2) vocational school, (3) college attendance, and (4) college graduation. Sewell et al. (1969) reported a strong relationship (r=.61) between student aspiration and attainment in education. This hypothesis and those described above have been consistently supported by the findings of Sewell and colleagues (Campbell, 1983; Hauser, Tsai, & Sewell, 1983).

Despite the numerous replications using national and international samples (Campbell, 1983), the Sewell et al. study (1969, 1970) had three significant limitations in its data. First, subjects in the mid-1950s Wisconsin survey were all sons of farmers. There were no female subjects! Second, neither retrospective nor prospective data was

available on subjects prior to their senior year of high school. Third, parent aspirations and evaluations of subjects were not measured.

Purpose and Objectives

The conceptual design of the current study is an expansion of the three Sewell et al. hypotheses described above. Extensions of the model's basic concepts are desirable in order to interpret roles of variables and to apply the model (Campbell, 1983; Hauser et al., 1983). The purpose of the current study is to explore further the relationships between parent and student aspirations and their influences on high school completion.

The current study addresses three significant limitations of the Sewell et al. (1970) study previously discussed. First, the current study utilizes parent interviews conducted while their children were in primary elementary grades, first through third, and upper elementary grades, fourth through sixth, and student interviews when subjects were in junior and senior high school. Second, data for male and female students is available. Third, parent interviews used in the current study include educational and career aspirations parents had for their children. In addition, the current study measures parents' evaluations of their children's academic ability and confidence.

The first goal of the current study is to investigate parent aspirations and interrelated parent variables through the following questions: (1) Is family socioeconomic status (SES) related to parent educational and career aspirations for their children?; (2) Are parent educational and career aspirations for their children interrelated?; and (3) Are parent educational and career aspirations for their children based upon parents' perceptions of children's academic abilities?

The second goal is to investigate student aspiration and its relationship to parent evaluations and aspirations by determining the relationship between parent aspirations for children and their children's aspirations.

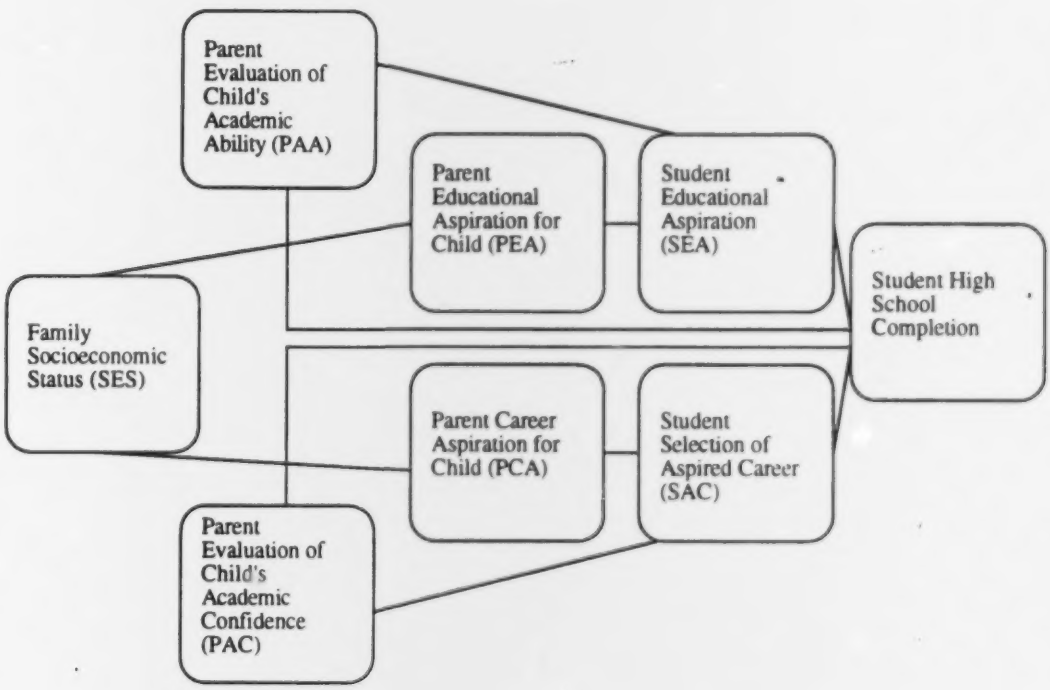
The third goal is to investigate the relationship between student high school completion and parent and student aspirations through answering the following questions: (1) Are parent educational aspirations for their children and evaluations of their academic

abilities related to their children's high school completion?; and (2) Are children's educational aspirations related to their completion of high school? Figure 2 illustrates a revision of the central hypotheses of Sewell et al. (1969).

The fourth goal is to address the question, "Does subject hyperactivity, a source of learning difficulty and behavior problems, affect the pattern of parent aspiration and student outcomes?" This research question serves to direct future research of learning difficulties and educational aspiration.

Figure 2

Revised Model of Relationships Between Parental and Student Variables


Parent Evaluation of Child's Academic Ability (PAA)
Parent Educational Aspiration for Child (PEA)
Student Educational Aspiration (SEA)
Student High School Completion
Family Socioeconomic Status (SES)
Parent Career Aspiration for Child (PCA)
Student Selection of Aspired Career (SAC)
Parent Evaluation of Child's Academic Confidence (PAC)

METHOD

Subjects

Parent and student interview data was obtained from a longitudinal study, the Hyperactivity–Learning Behavior Disorders Project directed by Dr. Nadine Lambert at the University of California at Berkeley. Originally, students from forty Northern California public and private schools in grades kindergarten through fifth were randomly identified for a research project. These students from the East San Francisco Bay area and Alameda and Contra Costa Counties were proportionally representative of the socioeconomic and ethnic make-up of their communities.

Data was collected annually from 1974 to 1986 thus following most of the children from early elementary school to high school graduation. Subjects in the current study are 201 project participants with comprehensive student and parent interview records. In order to study how parent and student variables are, at different ages, related to aspirations and high school completion the subject records were divided into three cohort groups. Cohort group 1 consisted of subjects in primary elementary grades (1-3) at the time of parent interviews. These subjects were later interviewed in junior high school. Cohort group 2a consisted of students in upper elementary grades (4-6) at the time of parent interviews. These subjects were interviewed subsequently in early high school grades (9-10). Cohort group 2b were also students in upper elementary grades (4-6) at the time of parent interviews, but these students were interviewed again later in high school grades (11-12). The number of subjects in cohort groups varied in later analysis depending upon availability of student and parent item records.

Subjects' hyperactivity status is an important variable in this study because previous aspiration research has not included this significant source of learning difficulty. Childhood hyperactivity is currently one of the most frequent reasons school-aged children are referred to mental health clinics (Frick & Lahey, 1991). Hyperactive students frequently experience difficulty achieving in school and experience negative nonacademic outcomes such as poor self-concept and low self-esteem (Lambert, 1988). Hyperactivity, now referred to as Attention-Deficit Hyperactivity Disorder, is a constellation of behaviors that include short attention span, distractibility, motor restlessness, and impulsivity (Lambert & Hartsough, 1987). According to an Interactive Systems Model (Lambert & Hartsough, 1984), interventions for hyperactive students can best be formulated by

understanding the interactions between these behaviors, as well as student characteristics and familial factors. Therefore, the current study investigates the relationship between hyperactivity status and two familial factors: parent aspirations for and academic evaluations of their children.

Hyperactive subjects in the current study were identified through doctors' evaluations, teachers' reports, or parents' reports. Initially several classifications denoted differences in the source of identification. These classifications were combined in the current study to increase the sample size. Although the severity of subjects' hyperactivity may have varied as a result of this combination, the subjects classified as hyperactive all experienced some form of learning difficulties as a result of their constellation of behaviors.

The current subject sample is purposely overrepresented with hyperactive subjects; that is, there are a larger proportion of hyperactive subjects than there was in the sampling area, the Northern California Bay area. Table 1 provides subject characteristics such as gender and hyperactivity sampling status for the three cohort groups. The representation of hyperactive students and the larger number of boys, who are more frequently identified as hyperactive, allow for results that reflect the influence of hyperactivity on parent and student aspirations.

Table 1

Number of Subjects by Gender and Hyperactivity Status

	Cohort Group		
	1	2a	2b
Non-hyperactive Subjects			
Males	23	39	22
Females	13	14	9
Hyperactive Subjects			
Males	18	28	19
Females	5	7	4

Note: Cohort group 1 were subjects whose parents were interviewed when subjects were ages 6-8. Cohort group 1 subjects were then interviewed when they were ages 12-13.

Cohort group 2a were subjects whose parents were interviewed when subjects were ages 9-11. Cohort group 2a subjects were then interviewed when they were ages 14-15.

Cohort group 2b were subjects whose parents were interviewed when subjects were ages 9-11. Cohort group 2b subjects were then interviewed when they were ages 16-17.

Measures

The research questions were addressed by investigating the relations between parent and student variables from interview items developed in the Hyperactivity–Learning Behavior Disorders Project. The addendum lists items and response choices used in the current study. The terms child, children, and students are used interchangeably to refer to subjects in the study. Table 2 lists variables and the abbreviations used throughout this study.

Table 2
Abbreviations for Variables

Wisconsin Model Variables

AP	Academic Performance
SOI	Significant Others' Influences
LEA	Level of Students' Educational Aspirations
LOA	Level of Students' Occupational Aspirations

Current Model Variables

PEA	Parent Educational Aspiration for Child
PCA	Parent Career Aspiration for Child
PAA	Parent Evaluation of Child's Academic Ability
PAC	Parent Evaluation of Child's Academic Confidence
SEA	Student Educational Aspiration
SAC	Student Selection of Aspired Career

Parent Measures

Central parent variables included the following measures: (1) parent educational aspiration for child (PEA) was measured by asking parents, "How much education would you like for your child?" Choices ranged from 1 (some high school) to 6 (graduate school). Two levels of this measure were constructed to develop 2 x 2 contingency tables for later analysis. Low PEA was a response from 1 (some high school) to 4 (some college). High PEA was a response from 5 (finish college) to 6 (graduate school); and (2) parent career aspiration for child (PCA) was measured by first asking parents, "What type of career would you like for your child." Choices were 1 (career level lower than family's

primary provider [mother or father]), 2 (career level same as primary provider), and 3 (career level higher than primary provider). Parent responses were then compared with the primary provider's actual occupational level to create levels of parent career aspirations for child. PCA levels thus ranged from 1 (unskilled primary provider wishing a lower level career for child) to 5 (professional primary provider wishing higher level career for child).

Related parent variables measured how parent knowledge of their child was related to parent aspirations for their child. These variables included two variables: (1) parent evaluation of child's academic ability (PAA) was measured by asking parents, "How well does your child do in school?" Choices ranged from 1 (very poorly) to 5 (very well). These choices were grouped into two levels of PAA: low (very poorly to average) and high (well to very well); and (2) parent evaluation of child's academic confidence (PAC) was measured by asking parents, "How confident is your child in his/her ability to do well in school?" Choices ranged from 1 (not at all confident) to 5 (very confident). Choices were combined into two groups: low (not at all confident to somewhat confident) and high (confident to very confident).

Student Measures

Student measures included the following: (1) student educational aspiration (SEA) was measured by asking students, "How much education would you like to have?" Similar to PEA, choices ranged from 1 (some high school) to 5 (graduate school). Levels of SEA were low (some high school to some college) and high (complete college to graduate school); (2) student selection of aspired career (SAC) was measured by asking students, "What type of job would you like to have?" This item yielded two groups: response given (indicating a selection of an aspired career) and no response given (indicating no selection of an aspired career); and (3) high school completion refers to later reports of graduation from high school or receiving a GED.

Data Analysis

Data analysis was conducted in three phases. First, frequencies for parent and student item responses were utilized to create dichotomous response categories for cross tabulation. Second, central parent and student variables were cross tabulated to answer the

six research questions. Third, in order to explain variation in parent and student aspiration, an analysis of variance (ANOVA) was conducted for each aspiration measure.

RESULTS AND DISCUSSION

Results are divided into four sections that address the study's research questions: (1) parent aspirations and interrelated parent variables, (2) student aspirations and relationship to parent evaluations and parent aspirations, (3) interrelations of student aspirations, and (4) student high school completion and relationship to parent and student aspirations. The results will be presented for all subjects and then for hyperactive and non-hyperactive subjects.

Parent Aspirations and Interrelated Parent Variables

Family SES was significantly correlated to PEA when students were in primary and upper elementary school grades (cohorts 2a and 2b). PAA was significantly related to PEA when the children were in primary and upper elementary grades. PAC was also significantly related to PEA in upper elementary school grades only, cohort groups 2a and 2b. However, neither parent evaluation was significantly related to PCA. PEA was not significantly interrelated for the cohort groups. Table 3 displays correlations of parent variables with parent aspirations for students.

It is interesting to note that parents based these educational aspirations on their evaluations of their children's academic confidence in upper elementary grades only! Covington (1989) and Nicholls (1983) have found that primary grade classroom learning experiences emphasize academic ability as determined by effort; however, classrooms increasingly emphasize academic ability through performance as students progress through upper grades. Children may do well in school during primary grades because of their effort; however, parents' perceptions of their children's academic confidence may be less salient to parents' educational aspirations for them until performance is emphasized more in the classroom.

Unlike PEA, PCA was not based upon the evaluations of their children's academic abilities! Parents seem unlikely to utilize information about their children's academic ability in forming career aspirations for them. This suggests that the PCA variable, which is relative to the occupational status of the primary provider, may be a measure of parents' wishes rather than expectations grounded on parent knowledge of their child's abilities.

Table 3

Correlations Between Parent Aspirations and Interrelated Parent Variables

Cohort Group	Parent Aspirations	
	Parent Educational Aspiration for Child (PEA)	Parent Career Aspiration for Child (PCA)
	Family Socioeconomic Status (SES)	
Cohort 1	.111 (n=49)	—
Cohort 2a	.284** (n=74)	—
Cohort 2b	.429***(n=49)	—
	Parent Evaluation of Child's Academic Ability (PAA)	
Cohort 1	.226* (n=59)	-.097 (n=25)
Cohort 2a	.302** (n=88)	.013 (n=42)
Cohort 2b	.281* (n=56)	.123 (n=25)
	Parent Evaluation of Child's Academic Confidence (PAC)	
Cohort 1	.169 (n=59)	.089 (n=25)
Cohort 2a	.262* (n=88)	.105 (n=42)
Cohort 2b	.333**(n=56)	.277 (n=25)
	Parent Career Aspiration for Child (PCA)	
Cohort 1	-.232 (n=19)	—
Cohort 2a	-.196 (n=28)	—
Cohort 2b	-.050 (n=17)	—

Note: Cohort group 1 were subjects whose parents were interviewed when subjects were ages 6-8. Cohort group 1 subjects were then interviewed when they were ages 12-13.

Cohort group 2a were subjects whose parents were interviewed when subjects were ages 9-11. Cohort group 2a subjects were then interviewed when they were ages 14-15.

Cohort group 2b were subjects whose parents were interviewed when subjects were ages 9-11. Cohort group 2b subjects were then interviewed when they were ages 16-17.

*p<.05, **p<.01, ***p<.001

Student Aspiration and Relationship to Parent Evaluations and Parent Aspirations

Student Educational Aspiration (SEA)

Over all cohort groups, neither PEA nor PCA were significantly correlated to student educational aspiration (SEA) (see Table 4). The absence of a relationship between parent and student educational aspirations can be explained by looking at student gender differences associated with SEA and PEA. Recall that levels of parent and student educational aspiration refer to a continuum from 1 (some high school) to 6 (graduate school).

Two-way ANOVAs for SEA with PEA by student gender indicated an interaction effect for PEA among junior high students, cohort 1, F=(1,55), 4.74, p=.034. This meant that when parents had low educational aspirations for their children in primary elementary grades, in junior high school boys developed higher educational aspirations than girls. Conversely, when parents had high educational aspirations for their primary school-aged children, in junior high school, girls had higher educational aspirations than boys.

Among early high school students (cohort 2a) there was a main effect for gender F=(1,84), 6.93, p=.10, Eta =.27. Girls had a higher mean SEA (5.0) than did boys (4.21). There were no significant effects for SEA among students in latter high school grades (cohort 2b).

The above results suggest that girls and boys develop different patterns of educational aspirations that are age-related and are related to the level of their parents' educational aspirations. Among junior high students, girls appear to be more negatively affected than boys by lower parent educational aspirations; however, among high school students, girls had higher educational aspirations with no interactive relationship to parent educational aspirations. It is difficult to explain the age-related differences in these findings in light of the previous finding from the American Association of University Women's report, *How Schools Shortchange Girls* (Wellesley College Center for Research on Women, 1992), that girls' aspirations decrease as they enter high school. The current findings provide some support for a possible mediating role of parent educational aspirations given their relation to junior high students' educational aspirations.

Table 4

Correlations Between Student Aspirations, Parent Evaluations, and Parent Aspirations

Cohort Group	Student Aspirations: Student Educational Aspiration (SEA)	Student Aspirations: Student Career Aspiration (SAC)
	Parent Evaluation of Child's Academic Ability (PAA)	
Cohort 1	.086 (n=59)	-.088 (n=57)
Cohort 2a	.058 (n=88)	-.61 (n=86)
Cohort 2b	.170 (n=56)	.287* (n=52)
	Parent Evaluation of Child's Academic Confidence (PAC)	
Cohort 1	.040 (n=59)	-.220* (n=57)
Cohort 2a	-.020 (n=88)	-.073 (n=86)
Cohort 2b	-.183 (n=56)	.268 (n=56)
	Parent Educational Aspiration for Child (PEA)	
Cohort 1	.123 (n=59)	.167 (n=57)
Cohort 2a	.082 (n=88)	.082 (n=88)
Cohort 2b	-.009 (n=56)	.207 (n=54)
	Parent Career Aspiration for Child (PCA)	
Cohort 1	-.078 (n=25)	
Cohort 2a	-.046 (n=42)	
Cohort 2b	-.067 (n=25)	

Note: Cohort group 1 were subjects whose parents were interviewed when subjects were ages 6-8. Cohort group 1 subjects were then interviewed when they were ages 12-13.

Cohort group 2a were subjects whose parents were interviewed when subjects were ages 9-11. Cohort group 2a subjects were then interviewed when they were ages 14-15.

Cohort group 2b were subjects whose parents were interviewed when subjects were ages 9-11. Cohort group 2b subjects were then interviewed when they were ages 16-17.

*p<.05, **p<.01, ***p<.001

Student Selection of Aspired Career (SAC)

Neither PEA nor PCA were significantly related to student selection of aspired career (SAC). PAC in upper elementary grades (cohort 2a) showed a nonsignificant relationship with SAC in early high school grades; however, PAC for children in upper elementary grades was positively related to SAC when students were in later high school (cohort 2b).

Table 4 provides data on age-related patterns between parents' evaluations and students' selection of aspired careers. PAC while in primary grades is negatively associated with junior high students' SAC (cohort 1). This relationship between parent evaluation and SAC becomes more positive but does not achieve significance for early high school students (cohort 2a) and then becomes significantly positive for upper high school students (cohort 2b). This result supports the idea that parent knowledge changes as the academic demands and determinants of academic success evolve for students. It also appears that academic confidence, as perceived by parents, is salient to SEA when related parent evaluations are (1) based on years of academic student performance and (2) related to student career decision making in late high school. Thus, the findings suggest that the student's age at the time of parent evaluation and the age at which the student's aspiration is measured are two crucial factors that must be addressed in the research of student and parent aspiration.

Interrelations of Student Aspirations

There were no relationships between SEA and SAC for any of the cohort groups. Although there was no direct relationship, it is possible that a third mediating variable such as student self-concept for school or work may have accounted for differences between the two aspiration measures.

Students' High School Completion and Relationship to Parent and Student Aspirations

Parent Aspirations

Neither PEA nor PCA were significantly related to student completion of high school. However, PAC in primary and upper elementary grades was significantly related to student completion of high school (see Table 5). There were moderate relations for cohorts 1, 2a, and 2b.

Table 5

Correlations Between Student High School Completion and Parent Evaluations and Parent Aspirations

Cohort Group	Student High School Completion	
	Parent Evaluation of Student Academic Ability (PAA)	
Cohort 1	.206	(n=59)
Cohort 2a	.154	(n=88)
Cohort 2b	.156	(n=54)
	Parent Evaluation of Student Academic Confidence (PAC)	
Cohort 1	.358**	(n=59)
Cohort 2a	-.254**	(n=88)
Cohort 2b	-.304*	(n=54)
	Parent Educational Aspiration for Child (PEA)	
Cohort 1	.092	(n=59)
Cohort 2a	.074	(n=88)
Cohort 2b	.048	(n=54)
	Parent Career Aspiration for Child (PCA)	
Cohort 1	-.060	(n=59)
Cohort 2a	.074	(n=88)
Cohort 2b	.052	(n=56)

Note: Cohort group 1 were subjects whose parents were interviewed when subjects were ages 6-8. Cohort group 1 subjects were then interviewed when they were ages 12-13.

Cohort group 2a were subjects whose parents were interviewed when subjects were ages 9-11. Cohort group 2a subjects were then interviewed when they were ages 14-15.

Cohort group 2b were subjects whose parents were interviewed when subjects were ages 9-11. Cohort group 2b subjects were then interviewed when they were ages 16-17.

*p<.05, **p<.01, ***p<.001

Student Aspirations

Table 6 displays correlations for student high school completion and student aspiration. SEA, measured in high school grades, was significantly related to student completion of high school. But SEA scores in junior high school grades was not significantly related to high school completion. This finding suggests that students' educational aspirations are more likely to reflect their actual educational plans as they approach high school completion. Links between SEA and high school completion have been supported in the writings of Rumberger (1983) who states that adolescents who do

not expect that they will receive high levels of education are more likely to drop out of school.

SAC was not significantly associated with high school completion. This finding suggests that although educational aspirations may be linked to actual educational outcomes, career aspirations do not share the same link. Currently, subjects in the present study are being interviewed as adults. These interviews can address the possible link between school-aged students' educational and career aspirations and career attainments in their adult years.

Table 6

Correlations Between Student High School Completion, Student Educational Aspiration, and Student Selection of Aspired Career

Cohort Group	Student High School Completion
	Student Educational Aspiration (SEA)
Cohort 1	.192 (n=59)
Cohort 2a	.207* (n=88)
Cohort 2b	.303* (n=54)
	Student Selection of Aspired Career (SAC)
Cohort 1	.196 (n=59)
Cohort 2a	-.060 (n=88)
Cohort 2b	-.135 (n=54)

Note: Cohort group 1 were subjects whose parents were interviewed when subjects were ages 6-8. Cohort group 1 subjects were then interviewed when they were ages 12-13.

Cohort group 2a were subjects whose parents were interviewed when subjects were ages 9-11. Cohort group 2a subjects were then interviewed when they were ages 14-15.

Cohort group 2b were subjects whose parents were interviewed when subjects were ages 9-11. Cohort group 2b subjects were then interviewed when they were ages 16-17.

*p<.05, **p<.01, ***p<.001

Influence of Hyperactivity on Educational Aspiration

Do hyperactivity and school behavior problems have an influence on SEA? To observe potential trends in the development of educational aspiration among hyperactive and non-hyperactive subjects, the study divided the two subject status groups and observed their graphed mean of educational aspiration scores. Non-hyperactive subjects had consistently higher SEA scores than hyperactive subjects from junior high through senior year of high school.

Two possible explanations for this difference are lower achievement and lower self-esteem among hyperactive students (Lambert, 1988) and the disruptive nature of their problem behavior (Whalen, Henker, & Dotemoto, 1980). Students who disrupt the environment of adults and peers are likely to receive negative feedback concerning their presence in school. Given a difference in the level of SEA between hyperactive and non-hyperactive students, the next step is to identify possible differences in the relationship between parent and student variables for them.

There were few significant differences between hyperactive and non-hyperactive students in terms of the three research relationships: (1) parent aspiration and interrelated parent variables, (2) student aspiration and its relationship to parent evaluations and parent aspirations, and (3) student high school completion and its relationship to parent and student aspirations. One exception was in the correlations between PEA and PAC. Non-hyperactive subjects in cohort 1 had a moderate correlation ($r=.414$, $p=.01$), and there was no significant correlation for hyperactive subjects. This finding implies that parents of hyperactive children in primary grades may be less likely to base their educational aspirations for their children upon evaluations of their academic confidence.

It is likely that students' hyperactivity status does not influence PEA until upper elementary grades whereupon hyperactivity status negatively influences PEA. Results indicated that there were main effects for hyperactivity on PEA approaching significance in a 2-way ANOVA for PEA by PAA for cohort 2a, $F=(1,84)$ 3.39, $p=.052$, $E=.30$. Non-hyperactive subjects had a higher PEA mean (4.79) than did hyperactive subjects (4.19). For cohort 2b, this 2-way ANOVA resulted in a significant main effect for hyperactive status, $F=(1,50)$ 5.85, $p=.019$, $E=.12$. Again, non-hyperactive subjects had a higher mean PEA (4.77) than hyperactive subjects (4.57). There were no significant main effects

in primary grades, cohort 1. These findings can be understood by considering that as academic performance becomes more salient in upper elementary school, learning difficulties of hyperactive children are more likely to influence PEA.

CONCLUSION

Summary

The following are key findings of the study.

Parent Aspirations and Interrelated Parent Variables

- SES and PAC were positively related to PEA in upper elementary grades.
- PAA was positively related to PEA in primary elementary grades.

Student Aspiration and Relationship to Parent Evaluations and Parent Aspirations

- There were no relationships between parent and SEA nor between parent and student career aspirations However, PCA was negatively related to SAC in junior high, early high school, and later high school grades.
- When parents had high PEA for their children, junior high girls had higher SEA than boys. When parents had low PEA, junior high boys had higher SEA than girls. Results add support to Danziger's (1983) finding that gender influences the development of educational aspirations.
- The relationship between student and parent aspirations was not significantly different between hyperactive/learning behavior problem students and non-hyperactive students.

Interrelations of Student Aspirations

- SEA and SAC were not related for any of the subject groups.

Student High School Completion and Relationship to Student and Parent Aspirations

- PAC in early and upper elementary grades was related to students' high school completion.
- SEA in early and late high school was related to student high school completion.

Influence of Hyperactivity on Educational Aspiration

- Parents of non-hyperactive children in upper elementary grades had higher PEA than parents of hyperactive and learning behavior problem children of this age group.
- Hyperactivity and learning behavior problems had an increasingly negative influence on PEA as students progress in school.

Comparing Findings with the Wisconsin Model

The current findings supported only one of the three Wisconsin Model paths under investigation. Findings supported the Wisconsin Model path between educational aspiration and educational attainment. In the current study, SEA and high school completion were related for students in early and later high school grades.

The current study did not support the high correlations in the Wisconsin Model paths between either SOI and LOA or SOI and LEA. A likely explanation for this lack of support is that Sewell et al. (1969) identified student perception of others' aspirations while the current study utilized parents' actual aspirations for their children.

The current study is unique in expanding and clarifying the SOI variable, adding parent academic evaluation measures, and including longitudinal data at elementary school and junior and senior high grades. Findings have evidenced the continued need to expand and refine previous concepts related to educational aspirations and career selection. Despite the support for conceptual elements of the Wisconsin Model, there is a strong need for specific measurements that distinguish between psychological variables (e.g., parents' perceptions of students' academic confidence and ability) and educational measures of achievement (e.g., class rankings).

Findings of the current study, unlike those from the Wisconsin Model, emphasized age related differences in variables associated with aspirations. The role of PAC has been noted as being specific to the age of students (primary versus elementary school) at the time of parent evaluation. Early PAC had a negative relation to SEA among young students, became less negative over time, and then was positively related to students' selection in high school. It was apparent that the use of the three prospective cohort samples was especially important in demonstrating the complexity of relationships between parent and student variables when the age of students is controlled.

Limitations of the Current Study

The current study measured parents' attitudes and beliefs about their children. One limitation, however, was that the study did not address specific activities that parents engage in to promote children's development of aspirations. Young and Friesen (1992) refer to such parent activities as "intentional actions" to influence career development. Examples of intentional actions include decreasing sex role stereotypes, promoting skill acquisition, and increasing independent thinking or action. Perhaps unexpected absences of relationships between parent and student aspirations in the current study could be explained by investigating how parent aspirations translate into intentional actions.

This study was an important first approach combining complex issues of parent-child aspiration, childhood hyperactivity, and high school completion. In using only complete longitudinal data, the small sample size limits generalizing findings for non-hyperactive students; however, the findings do evidence a need for continued research of aspiration among problem students and those without behavior related problems.

IMPLICATIONS FOR POLICY

One of the most important implications of the current study is that parents' educational aspirations and parents' academic evaluations of children are indeed related to the development of children's educational aspirations. Therefore, educational policies aimed at reforming education should include parent involvement in student academic and career development. Policies promoting parent involvement should communicate that parents' lower educational aspirations for their junior high school children may have more negative affects for their daughters than for their sons. Given that parent educational aspirations appear to be based upon parent evaluations of their child's academic ability and academic confidence, it is important for parents to have a constructive base for such evaluations. In practice, policies can provide information for parents to develop "parent knowledge" of their children's academic development. Examples include strengths and weaknesses in study skills, problem-solving strategies, and motivation to learn.

By increasing "parent knowledge," parents would be more likely to play an active role in their children's school experience. Current findings supported the instrumental role of parent knowledge in the development of parent aspirations. When parents are asked to consider their children's confidence in doing well, they become focused on the learning experience of their children. One specific component of parent knowledge might well be a parent's ability to consider what it is like for their child to learn in school.

The current study also emphasizes the need of parent involvement for children with behavioral problems, including hyperactivity, that interfere with learning. The behavioral manifestations of hyperactivity, including impulsivity, distractibility, and motor restlessness, are likely to be negative and frequent topics of teacher reports to parents. Such behavior can overshadow academic reports. Explicit ways for parents to evaluate their children's academic success (e.g., mastery of learned material) and academic growth (e.g., previous versus current areas of knowledge and skills) encourage parents to better understand their children's learning experiences.

The current study provides evidence that hyperactive students have lower educational aspirations than students without behavior problems. Educational policymakers should consider the dissemination of research on students with behavior problems when considering how to involve parents in the educational experience of such

students. Future research is needed to investigate the effectiveness of providing parents with information about the relations between aspirations and educational and career outcomes.

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ADDENDUM

Operational Definitions for Variables

Parent Variables

Parent Educational Aspiration for Child (PEA)

"How much education would you like for your child?"

1 some high school
2 finish high school
3 post high school training
4 some college
5 finish college
6 graduate school

Parent Career Aspiration for Child (PCA)

The following scale was generated by considering the career level of the family's primary provider (mother or father) and the level of career wished by the provider, as measured by asking, "What type of career would you like for your child?"

1 unskilled provider wishing lower-level career for child.

2 unskilled provider wishing same-level career for child, or skilled provider wishing lower-level career for child.

3 unskilled provider wishing higher-level career for child, or skilled provider wishing same-level career for child, or professional provider wishing lower-level career for child.

4 skilled provider wishing higher-level career for child, or professional provider wishing same-level career for child.

5 professional provider wishing higher-level career for child.

Parent Evaluation of Child's Academic Ability (PAA)

"How well does your child do in school?"

1 very poorly
2 poorly
3 average
4 well
5 very well

Parental Evaluation of Children's Academic Confidence (PAC)

"How confident is your child in his/her ability to do well in school?"

1 not at all confident
2 not too confident
3 somewhat confident
4 confident
5 very confident

Student Variables

Student Educational Aspiration (SEA)

"How much education would you like to have?"

1 some high school
2 finish high school
3 post high school training
4 some college
5 finish college
6 graduate school

Student Selection of Aspired Career (SAC)

"What job would you like to have?"

1 selection of an aspired career
2 no selection of an aspired career